

Abstract

An electro acoustic device and related method for increasing the production capacity of wells that contains oil, gas and/or water is disclosed. The electro acoustic device is submerged in the well producing zone, and includes an electric generator, one or more electro acoustic transducers, and one or more wave guide systems (sonotrodes) that include radiators which transmit vibrations into the medium under treatment. The electro acoustic device produces vibrations that stimulate the occurrence of mass transfer processes within the well. According to one or more embodiments, shear vibrations are produced in the well bore region due to the phase displacement of mechanical vibrations produced along the axis of the well, achieving alternate tension and pressure due to the superposition of longitudinal and shear waves.